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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,690	03/12/2002	Inge Johansen	2001_1827A	1301

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EXAMINER

KERNS, KEVIN P

ART UNIT	PAPER NUMBER
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1725

9

DATE MAILED: 04/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

mk-9

Office Action Summary	Application No.		Applicant(s)	
	10/009,690		JOHANSEN ET AL.	
	Examiner		Art Unit	
	Kevin P. Kerns		1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 1-8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3,8</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the means for increasing or reducing the primary cooling (in the last 2 lines of claim 1) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "(12,13)" have been used to designate both permeable cavity rings and a wall (are these terms intended to mean the same structure?). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "24" in Figure 2(a); and "A-A" in Figures 2(a) and 2(b). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in

the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

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5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the means for increasing or reducing the primary cooling, as set forth in the last 2 lines of claim 1; and “protrusion (24)”, as set forth in the 3rd line of claim 2.

6. The use of the trademark “Plexiglas” has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

7. The disclosure is objected to because of the following informalities: on page 2, 9th line, reference to claims 2-5 should be deleted from the specification, as claim numbers can change throughout prosecution of the application. On page 3, 6th line, “(13,14)” should be changed to “(12,13)”. On page 3, last line, “24” (see paragraph 2 above) has not been given a structural name. Throughout the specification, all instances of the terms “aluminium” and “characterised” should be changed to “aluminum” and “characterized”, respectively. Appropriate correction is required.

Claim Objections

8. Claims 1-8 are objected to because of the following informalities: in (all) claims 1-8, "characterised" should be changed to "characterized". In claim 1, 1st line, "aluminium" should be changed to "aluminum". In claim 1, 7th line, it appears as though "nozzles" should be changed to "nozzle", as "at least one" also precedes "slit" in the same line of this claim. Claim 1 also includes narrower recitations following the terms "in particular" and "preferably", such that the broader features (e.g. all metals and all mold cavity shapes, which are disclosed prior to the stated terms above, respectively) will be examined. In claims 4, 7, and 8, 4th line of the claims, "(12,12)" should be changed to "(12,13)", and the structures "(12,13)" should be consistent throughout the claims (either a "wall" or a "permeable material (cavity rings?)"). In claim 5, 3rd line, "a" should be added before "different". Appropriate correction is required.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claim 1 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/018,174. Although the conflicting claims are not identical, they are not patentably distinct from each other because each of the claims shares identical elements, with the exception of the flow of oil/gas (coolant) is able to "differentiate" around the circumference of the mold cavity in 10/009,690. increased/decreased cooling in 10/018,174. However, claim 1 of the present application teaches that flow of coolant is able to be increased/decreased around the circumference of the mold cavity, for the purpose of more uniform cooling around the different regions of the mold.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In the last 2 lines of claim 1, a distinct description of the

means for increasing or reducing the primary cooling, which is necessary for operation of the apparatus, is absent from the specification and drawings.

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 1, it is unclear as to what structural feature is being defined by the limitation "the primary cooling is so designed that it may be increased or reduced". Does this limitation refer to adjusting cooling via a valve (during operation) or using/exchanging different plates/materials (between operations)?

Claims 3, 4, and 6-8 recite the limitation "the mould housing". There is insufficient antecedent basis for this limitation in the claims. It is suggested to insert "having a mould housing (8)" after "mould (3)" in the 3rd line of claim 1.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1 and 3 insofar as definite are rejected under 35 U.S.C. 102(b) as being anticipated by Dantzig et al. (US 4,523,624).

Dantzig et al. disclose a horizontal casting apparatus for casting round ingots, in which the apparatus includes a liquid metal reservoir 22, a releasable, circular mold 12 (steel is disclosed as one material for the mold) having a mold cavity, a valved lubricant (oil, graphite etc.) supply system (50,51,52,54,56) for providing primary/secondary cooling, and a cooling (preferably water) manifold arranged circumferentially around the outer mold wall 16, such that primary/secondary cooling is controlled by a valving arrangement 48 (abstract; column 3, lines 25-68; column 4, lines 1-53; and Figures 1 and 2).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

19. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

20. Claims 1-8 insofar as definite are rejected under 35 U.S.C. 103(a) as being unpatentable over Kittilsen et al. (US 5,915,455).

Kittilsen et al. disclose an apparatus for horizontal casting of light metals, in which the apparatus includes a supply of molten metal M, a mold 10 with multiple housings and an oil ring 19 with oil supply channels 20 to lubricate the mold, a transition ring of insulating porous refractory material 21, gas supply channels 22, and separate primary and secondary cooling water circuits 11,12 (abstract; column 1, lines 55-67; column 2, lines 1-44; column 3, lines 7-67; column 4, lines 1-67; column 5, lines 1-3; and Figures 1 and 2). One of ordinary skill in the art would have recognized that (in addition to the mold material -- e.g. aluminum, copper, steel etc.), although the primary cooling is not specifically controlled by valve means, the exchanges of several molds having various geometries (having dimensions with protrusions, leading to variance in the coolant flow rates) were made (easily replaceable) by Kittilsen et al. (in Tables I and

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II), for the purpose of producing ingots at adequate casting speed with good surface quality (column 3, lines 50-67; column 4, lines 1-27; and column 5, lines 20-41).

21. Claims 1-8 insofar as definite are rejected under 35 U.S.C. 103(a) as being unpatentable over Steen et al. (US 5,678,623).

Steen et al. disclose continuous casting equipment of aluminum ingots or billets, in which the equipment includes a supply of metal 11, casting mold 1 having a collar made of aluminum or steel, an overhang 9 (protrusion) within the mold cavity, two permeable, separate rings/wall elements (12,13), or plates having holes, a water slit 10, and an oil supplying element 12, such that the elements for the supply of the two fluids may be optimized independently to sustain the best conditions when performing casting operations (abstract; column 2, lines 30-45; column 3, lines 25-42 and 51-67; column 4, lines 1-32; and Figures 1 and 2). Although horizontal continuous casting is not specifically disclosed by Steen et al., one of ordinary skill in the art would have recognized that the Steen et al. disclosure of continuous or semi-continuous direct chill casting (column 1, lines 4-6; and column 2, lines 63-67) would be obvious to be applicable to a horizontal continuous casting apparatus, as similar structural features are disclosed by Steen et al., such that the independent control of fluids are advantageous for obtaining uniform distribution of gas and oil along the periphery of the (suitably arranged) mold (column 2, lines 39-43).

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Conclusion


22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Simonson et al. and Foye references are also cited to show related art.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin P. Kerns whose telephone number is (703) 305-3472. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-6078 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

KPK
kpk
April 14, 2003


KUANG Y. LIN
EXAMINER
GROUP 320
1725